

CLAIMS

1. A method to immobilise at least one type of carbohydrate molecule comprising the steps of:
 - i) providing a monomer source;
 - ii) creating a plasma of said monomer;
 - iii) coating a surface with said plasma to provide a plasma polymer coated surface; and
 - iv) contacting said polymer coated surface with at least one type of carbohydrate molecule wherein the carbohydrate molecule is in its native form.
2. A method as claimed in claim 1 wherein the carbohydrate is passively adsorbed to the plasma polymer coated surface.
3. A method as claimed in claim 1 or 2 wherein the carbohydrate is provided as a solution comprising at least one carbohydrate molecule.
4. A method as claimed in any of claims 1 to 3 wherein the monomer is a volatile alcohol.
5. A method as claimed in any of claims 1 to 3 wherein the monomer is a volatile amine.
6. A method as claimed in any of claims 1 to 3 wherein the monomer is a volatile hydrocarbon.
7. A method as claimed in any of claims 1 to 3 wherein the monomer is a volatile acid.
8. A method as claimed in any preceding claim wherein the surface comprises a polymer comprising a nitrogen content of at least 2%.
9. A method as claimed in claim 8 wherein the nitrogen content is 2-20%.

10. A method as claimed in any of claims 1 to 7 wherein the surface comprises a polymer comprising a nitrogen content greater than 20%.
11. A method as claimed in claim 1, 2 or 3 wherein the monomer contains a hydroxyl, amino or carboxylic acid group.
12. A method as claimed in claim 10 wherein the monomer is allylamine.
13. A method as claimed in any preceding claim wherein the monomer has a vapour pressure of at least 6.6×10^{-2} mbar at ambient room temperature.
14. A method as claimed in any preceding claim wherein the plasma polymer is deposited from a plasma of W/FM of $< 10^9$ J/kg and ideally $< 10^8$ J/Kg and more ideally $< 10^7$ J/Kg.
15. A method as claimed in any of claims 1 to 3 wherein the polymer comprises an amine co-polymer.
16. A method as claimed in claim 15 wherein the co-polymer is prepared by the plasma polymerisation of an organic amine with a saturated (alkane) or unsaturated (alkene, diene or alkyne) hydrocarbon of up to 20 carbons.
17. A method as claimed in any preceding claim wherein the carbohydrate is a homopolysaccharide.
18. A method as claimed in any of claims 1 to 16 wherein the carbohydrate is a heteropolysaccharide.
19. A method as claimed in claim 18 wherein the heteropolysaccharide is a glycosaminoglycan.
20. A method as claimed in claim 19 wherein the glycosaminoglycan is selected from the group consisting of: hyaluronan; dermatan sulfate; chondroitin sulphate; heparin; heparan sulphate; or keratan sulphate.

21. A method as claimed in any preceding claim wherein the surface is part of a biosensor.
22. A method as claimed in any of claims 1 to 20 wherein the surface is part of a therapeutic vehicle.
23. A method as claimed in any of claims 1 to 20 wherein the surface is part of a device wherein said device is used in the collection of biological samples from an animal, preferably a human.
24. A method as claimed in any of claims 1 to 20 wherein the surface is part of an affinity purification matrix.
25. A method as claimed in any of claims 1 to 20 wherein the surface is part of a microarray.
26. A biosensor comprising a surface obtainable by the method as claimed in any of claims 1 to 20.
27. A therapeutic vehicle comprising a surface obtainable by the method as claimed in any of claims 1 to 20.
28. A sample collection device comprising a surface obtainable by the method as claimed in any of claims 1 to 20.
29. An affinity purification matrix comprising a surface obtainable by the method as claimed in any of claims 1 to 20.
30. A microarray comprising a surface obtainable by the method as claimed in any of claims 1 to 20.

31. A surface obtainable by plasma polymerisation to which is immobilised at least one type of carbohydrate molecule wherein the carbohydrate molecule is in its native form.

32. A surface as claimed in claim 31 wherein the carbohydrate molecule is passively adsorbed to the surface.